



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

HB

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/799,506	02/12/97	YAMAZAKI	S 0756-1630

MM42/0727  
SIXBEY FRIEDMAN LEEDOM AND FERGUSON  
2010 CORPORATE RIDGE SUITE 600  
MCLEAN VA 22102

EXAMINER	
WILCZEWSKI, M	
ART UNIT	PAPER NUMBER
2822	27

DATE MAILED: 07/27/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

08/799,506

Applicant(s)

Yamazaki et al.

Examiner

M. Wilczewski

Group Art Unit

2822



☒ Responsive to communication(s) filed on Apr 26, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 8, 9, 12, 13, 21, 23, and 47-79 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 8, 9, 12, 13, 21, 23, and 47-79 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 24

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2822

## **DETAILED ACTION**

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-  
(d). The certified copy has been filed in parent Application No. 08/330,797, filed on October 28, 1994.

### ***Drawings***

The drawings filed on October 28, 1994, have been objected to by the Draftsperson; note the form PTO-948 attached to Paper No. 4.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2822

Claims 8, 9, 12, 13 21, 23, 47-57, 59, 60, 62-66, 71 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al., U. S. Patent 5,352,291, further in view of Pressley, U. S. Patent 4,475,027, both of record.

Zhang et al. disclose a multi-chambered apparatus which comprises a laser irradiation chamber 4 in which a laser beam is irradiated from outside the chamber through a quartz window, see figure 2 and columns 6-7 (Example 2). The laser beam is adjusted with an optical system so that the cross section of the laser beam has a rectangular shape. Zhang et al. lack anticipation only of disclosing that the optical system comprises lens having a convex surface positioned toward the irradiation side of the laser light and a planar side positioned away from the irradiation side of the laser light. Pressley discloses an optical system for adjusting a laser beam cross section to be rectangular which comprises a lens having a convex surface positioned toward the irradiation side of the laser light and a planar side positioned away from the irradiation side of the laser light, see figure 4 and column 4, line 60, bridging column 5 to line 23. It would have been obvious to one skilled in the art that the optical system of Pressley could have been used in the known apparatus of Zhang et al., since the optical system of Pressley adjusts the cross section of a laser beam to be rectangular in shape which is required by the optical system used in the known apparatus of Zhang et al.

Zhang et al. teach that the laser beam is adjusted with an optical system to have a rectangular cross section, at a predetermined width corresponding to that of the substrate and being elongated along a direction vertical to the direction in which the substrate is transported.

Art Unit: 2822

Accordingly, the substrate can be continuously irradiated with the laser beam from edge to edge, see column 6, lines 47-55. Therefore, although Zhang et al. do not disclose the dimensions of the substrate or the cross section of the laser beam, given the disclosure of Zhang et al., it would have been obvious to one skilled in the art that the width of the laser beam is at least equal to the width of the substrate in order for the substrate to be irradiated with the laser beam from edge to edge. The specific dimensions claimed by Applicants do not patentably distinguish the claimed apparatus from that of Zhang et al. because Zhang et al. teach the general concept of using a rectangular laser beam having a width at least equal to that of the substrate.

Claims 58 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al., U. S. Patent 5,352,291, further in view of Pressley, U. S. Patent 4,475,027 as applied to claims 56 and 59, respectively, further in view of Begin et al., U. S. Patent 5,310,410, of record.

The Zhang et al. patent is applied as supra. Zhang et al. lack anticipation of using a robotic hand as a transferring means. Begin et al. disclose an apparatus for processing semiconductor wafers which includes satellite reaction chambers 60, 62, 64, and 66 disposed around the periphery of central chamber 14, see figure 1. A robot assembly 16 comprising arms 18, 20, and 22 is disposed in central chamber 14. Assembly 16 moves the substrate 12 to any position within the apparatus. Although Zhang et al. discloses an apparatus in which the chambers are connected in series, Zhang et al. teach that the apparatus can be modified to provide the chambers with a common room for supplying the substrate, see column 7, lines 3-6.

Art Unit: 2822

In light of this teaching, it would have been obvious to one skilled in the art to use a robotic arm as disclosed by Begin et al. to transport the substrate between the processing chambers.

Claims 67-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al., U. S. Patent 5,352,291, further in view of Pressley, U. S. Patent 4,475,027 as applied to claims 8, 55, 62, and 63, respectively.

Claims 67-70 recite that the semiconductor is crystallized by the irradiation of the laser light at the same time as the formation of an insulating layer. However, claims 8, 55, 63, and 63, from which claims 67-70 depend, are apparatus claims. A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of that claimed. *Ex parte Masham*, 2 USPQ 2d 1647 (PTO Board of Appeals, 1987). Moreover, intended use has been continuously held not to be germane to determining the patentability of an apparatus. *In re Finsterwalder*, 168 USPQ 530 (CCPA 1971). The purpose to which an apparatus is put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim. *Ex parte Thibault*, 164 USPQ 666 (PTO Board of Appeals 1969). In addition, the inclusion of the material worked upon by an apparatus being claimed does not impart patentability to the claims. *In re Otto et al.*, 136 USPQ 458 (CCPA 1963).

Claims 73-79 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel

Art Unit: 2822

the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 73-79 recite process limitations which relate to the intended use of the claimed apparatus and do not further limit the claimed apparatus.

### ***Response to Arguments***

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection. Applicants have argued that Zhang et al. '291 does not teach or suggest a lens having a convex surface and a planar surface. However, this deficiency is deemed overcome by the combination of Zhang et al. with Pressley.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2822

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Wilczewski whose telephone number is (703) 308-2771.

A handwritten signature in black ink, appearing to be 'M. Wilczewski', with a stylized, cursive script.

M. Wilczewski  
Primary Examiner  
Tech Center 2800

MW  
July 26, 1999